

SLIDING SIGN

Your Petitioners, MYRON C. NOBLE, a citizen of the United States and a resident of the State of Indiana, whose post office address is 3619 Sullivan Court, South Bend, Indiana 46614; AARON C. POOT, a citizen of the United States and a resident of the State of Indiana, whose post office address is 1234 Brook Run Drive, Apt. 1A, Mishawaka, Indiana 46544; THEODORE W. REDINGER, SR., a citizen of the United States and a resident of the State of Indiana, whose post office address is 6650 17th Road, Argos, Indiana 46501; and JOHN R. ERICHSEN, a citizen of the United States and a resident of the State of Indiana, whose post office address is 10321 Adams Road, Granger, Indiana 46530, pray that Letters Patent may be granted to them for the invention set forth in the following specification:

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

This invention relates to a sliding sign and more particularly to a sliding sign which is mounted on an elevated truss which extends over a roadway. More particularly, the invention relates to a sliding sign which allows the sign to be selectively moved to one end of the truss to facilitate maintenance of the sign at the shoulder of the roadway.

2. DESCRIPTION OF THE PRIOR ART

Various types of trusses such as box trusses are extended over roadways in an elevated condition to support signs. If the signs require maintenance or replacement,

1 traffic lanes must be closed to enable workers to gain access to the signs by the way
of lift buckets, ladders, etc. Lane closures are not only dangerous but are costly.

SUMMARY OF THE INVENTION

5 A sliding sign is described which is mounted on a truss such as a box truss or
the like extending over a roadway. The truss includes top and bottom chords which
are interconnected by various truss members. A first elongated rail is secured to the
top chord of the truss and a second elongated rail is secured to the bottom chord of
10 the truss. A plurality of horizontally spaced-apart and vertically disposed beams are
movably mounted on the first and second rails and support one or more signs at the
front side thereof. Wheels having V-shaped peripheries are secured to the upper and
lower ends of the sign supporting beams and roll upon the first and second rails,
respectively. The wheels at the lower ends of the sign supporting beams transfer
15 gravity and lateral loads to the bottom chord of the truss while the wheels at the upper
end of the sign supporting beams transfer lateral loads to the top chord of the truss.
The V-shaped peripheries of the wheels prevent the wheels from disengaging from the
respective rails. A bidirectional motor with brake is connected to the sign supporting
structure so that the sign supporting structure and the sign mounted thereon may be
20 moved from a position over the roadway to a position at one end of the truss so that
maintenance may be performed on the sign at the roadway shoulder thereby
preventing traffic lane closures.

25 It is therefore a principal object of the invention to provide a sliding sign for an
overhead roadway sign structure.

1 Another object of the invention is to provide an overhead sign structure for use
over roadways wherein the sign supporting structure thereon may be moved from a
position over the roadway to a position near the roadway shoulder to facilitate
maintenance and/or replacement of the sign.

5 A further object of the invention is to provide a sliding sign for an overhead truss
wherein lateral and gravity loads are transferred from the sign structure to the top and
bottom chords of the truss structure.

10 Yet another object of the invention is to provide a sliding sign which
incorporates wheels having V-shaped peripheries which not only tend to clean the rails
upon which they are mounted but which also transfer loads to the chords of the
structure.

15 Yet another object of the invention is to provide a sign structure of the type
described which includes a bidirectional motor connected to the sliding sign to enable
the sliding sign to be moved from a position over the roadway to a position adjacent
the shoulder of the roadway.

20 Still another object of the invention is to provide a sliding sign structure which
may be easily mounted on an existing overhead truss without extensive modification
thereof.

These and other objects will be obvious to those skilled in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

25 Figure 1 is a partial perspective view of a box beam truss having the sliding sign
structure of this invention mounted thereon;

1 Figure 2 is a partial perspective view of the sliding sign structure of this invention;

 Figure 3 is a top view of the sliding sign structure of this invention;

 Figure 4 is an end view of the sliding sign structure of this invention; and

5 Figure 5 is a partial end view of the sliding sign structure of this invention.

DETAILED DESCRIPTION OF THE INVENTION

10 The numeral 10 refers to a truss which extends over a roadway for supporting one or more sign structures thereon. Although most of the sign supporting trusses are of the box beam truss construction as shown in the drawings, other types of truss structures are also employed. Regardless of the truss structure, the structure will include a top chord 12 and a bottom chord 14 which face the direction of traffic. If a box beam truss structure is employed, a pair of top chords and a pair of bottom chords are employed, as illustrated in Figure 1. The chords are interconnected in
15 conventional fashion by truss members 16. Normally, the truss 10 is comprised of a plurality of truss sections 10A which are bolted together in an end-to-end fashion. The truss 10 is supported at its opposite ends by upstanding supports in conventional fashion so as to extend over the roadway.

20 Normally, a sign structure 17 will be supported on the truss over the roadway. If maintenance or replacement of the sign structure is required, one or more traffic lanes beneath the sign structure must be closed to enable workers to gain access to the sign structures by lift buckets, ladders, etc. The instant invention eliminates the need for
25 lane closures when sign maintenance/replacement is required.

1 A first elongated rail or tube 18 is secured to the top chord 12 by clamps 20 or
any other convenient means. The rail 18 extends from the shoulder end of the truss to
a point over the roadway. A second elongated rail 22 is secured to the bottom chord
14 by clamps 20 or any other convenient means. The rail 22 also extends from the
5 shoulder end of the truss to a point over the roadway.

Vertically disposed and horizontally spaced sign supporting beams 24 are
positioned between the chords 12 and 14 and have wheels or rollers 26 mounted
thereon at the upper end thereof and wheels or rollers 28 mounted thereon at the
10 lower end thereof. Preferably, the wheels 26 and 28 have generally V-shaped
peripheries which engage the rails 18 and 22, respectively, as seen in Figure 5. Sign
structure 17 is secured to the beams 24. The wheels 28 transfer gravity and lateral
loads into the bottom chord 14 while wheels 26 transfer lateral loads into the top chord
12. The V-shaped peripheries of the wheels 26 and 28 prevent the wheels 26 and 28
15 from disengaging from the rails 18 and 22, respectively. Wheels 28 ride upon rail 22
and tend to clean the rail as they pass thereover. Wheels 26 engage rails 18 but have
a certain amount of "play" therebetween. Thus, sign structure 17 may be selectively
moved along rails 18 and 22 from a position over the roadway to a position adjacent
20 the shoulder of the roadway to enable maintenance and/or repair of the sign structure
safely from the roadway shoulder without the necessity of lane closures.

Many different types of mechanisms may be provided for moving the sign
structure along the rails 18 and 22. A preferred embodiment is illustrated in Figure 2.
25 As seen in Figure 2, the ends 32 and 34 of a cable 36 are tied off or connected to one

1 of the beams 24. Cable 36 extends around end pulley 38 which is rotatably mounted
on the truss 10. Cable 36 also extends around a front or drive pulley 40 which is
mounted on the power shaft of a bidirectional motor 42 which is also secured to the
truss 10. Motor 42 includes a conventional brake which prevents rotation of pulley 40
5 unless motor 42 is energized.

Motor 42 may be operated in one direction to move the beams 24 and sign
structure 30 from a position over the roadway to a position adjacent the shoulder of the
roadway and vice versa. The brake on the motor 42 prevents the sign structure from
10 moving until the motor 42 is activated.

Thus, it can be seen that the invention accomplishes at least all of its stated
objectives.